

MODEL : RD-85B

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 80 mVp-p (Max) V2: 120 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	V1: 50mVp-p (Max) V2: 30mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 4.75V ~ 5.5V	I/P: 230VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	4.69V~ 5.61V/ 230VAC 4.69V~ 5.61V/115VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: -2%~ 2% (Max) V2: -5%~ 5% (Max)	I/P: 115VAC /264 VAC O/P:FULL/ MIN % LOAD Ta:25°C	V1: 0.2% ~ -0.2% V2: 2.2% ~ -2.2%	P
4	LINE REGULATION	V1: -0.5%~ 0.5% (Max) V2: -1%~ 1% (Max)	I/P: 115VAC ~ 264VAC O/P:FULL LOAD Ta:25°C	V1: 0%~ 0% V2: 0.03%~ -0.03%	P
5	LOAD REGULATION	V1: -1%~ 1% (Max) V2: -3%~ 3% (Max)	I/P:230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.12%~ -0.12% V2: 1.8%~ -1.8%	P
6	CROSS REGULATION	V1: -1%~ 1% (Max) V2: -3%~ 3% (Max)	I/P: 230VAC O/P:Testing O/P 60%LOAD Other O/P 40%LOAD Change Ta:25°C	V1: 0%~ 0% V2: 2.2%~ -2.2%	P
7	SET UP TIME	230 VAC/500 ms (Max) 115 VAC/1400 ms (Max)	I/P:230 VAC I/P:115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 187 ms 115 VAC/ 1345ms	P
8	RISE TIME	230 VAC/20 ms (Max) 115 VAC/30 ms (Max)	I/P:230 VAC I/P:115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 6 ms 115 VAC/ 6 ms	P
9	HOLD UP TIME	230 VAC/ 100 ms (TYP) 115 VAC/ 18 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	230 VAC/ 126ms 115 VAC/ 24ms	P
10	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: < 5%	P
11	DYNAMIC LOAD	V1: 1000 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C	96mVp-p	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	88VAC~ 264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	59V~ 264 V	P
			I/P: LOW-LINE-3V= 85 V HIGH-LINE+15%= 300 V O/P:FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN ( AC POWER ON/OFF NO DAMAGE )	TEST: OK	
2	INPUT FREQUENCY RANGE	47 HZ ~ 63 HZ NO DAMAGE OSC	I/P: 88VAC ~ 264 VAC O/P:FULL-MIN LOAD Ta:25°C	TEST:OK	P
3	EFFICIENCY	80 % (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	81.1%	P
4	INPUT CURRENT	230 V/ 1.5 A(TYP) 115 V/ 2.5 A(TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C	I = 1A/ 230 VAC I = 1.7 A/ 115 VAC	P
5	INRUSH CURRENT	230 V/ 40 A(TYP) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	I = 39.9A/ 230VAC	P
6	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P:254 VAC O/P:Min LOAD Ta:25°C	L-FG.: 0.6mA N-FG: 0.6mA	P

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	110 %~ 150 %	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25°C	119% /230 VAC 119% /115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 5.75 V~ 6.75 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C	5.9V/ 230 VAC 5.9V/ 115 VAC Hiccup Model	P
3	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE Hiccup Mode	P

**ENVIRONMENT TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	MODEL : RD-85B 1. ROOM AMBIENT BURN-IN : 1.5 HRS I/P: 230 VAC O/P: 100% LOAD Ta= 29.4 °C 2. HIGH AMBIENT BURN-IN : 3 HRS I/P: 230 VAC O/P:100% LOAD Ta= 41.3 °C			P
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P:230 VAC O/P: 121% LOAD Ta: 25°C	TEST : OK	P
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 230 VAC O/P: 100 % LOAD Ta= -25 °C	TEST : OK	P
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 40 °C NO DAMAGE	I/P:272 VAC O/P:FULL LOAD Ta= 40 °C HUMIDITY= 95 %R.H	TEST : OK	P
5	TEMPERATURE COEFFICIENT	± 0.03 %(0-50°C)	I/P: 230 VAC O/P:FULL LOAD	± 0.01 %(0-50°C)	P
6	VIBRATION TEST	1 Set Operating at I/P: 230 VAC NO LOAD (1) Waveform: Sine Wave (2) Frequency:10-500Hz (3) Sweep Time:10min/sweep cycle (4) Acceleration:5G (5) Test Time:1 hour in each axis (X.Y.Z) (6) Ta:25°C		TEST : OK	P

**SAFETY TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 3 KVAC/min I/P-FG: 1.5 KVAC/min O/P-FG: 0.5 KVAC/min	I/P-O/P: 3.6 KVAC/min I/P-FG: 1.8 KVAC/min O/P-FG: 0.6 KVAC/min Ta:25°C	I/P-O/P: 4.93mA I/P-FG: 4.21mA O/P-FG: 3.21mA NO DAMAGE	P
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ I/P-FG: 500VDC>100MΩ O/P-FG:500VDC>100MΩ	I/P-O/P: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta:25°C	I/P-O/P: 6G Ω I/P-FG: 2G Ω O/P-FG: 1G Ω NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	50 mΩ	P
4	APPROVAL	TUV: Certificate NO : R50045826 UL: File NO : E183223			P

**E.M.C TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab	P
4	E.S.D	EN61000-4-2 INDUSTRY AIR:8KV / Contact:4KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
5	E.F.T	EN61000-4-4 INDUSTRY INPUT: 2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
6	SURGE	IEC61000-4-5 INDUSTRY L-N :2KV L,N-PE:4KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
7	Test by certified Lab & Test Report Prepare				

**M.T.B.F & LIFE CYCLE CALCULATION**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C 62 IS THE MOST CRITICAL COMPONENT I/P: 230 VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 21417 HRS I/P: 230 VAC O/P:FULL LOAD Ta= 40 °C LIFE TIME= 85120 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 239.4K HRS			P

**COMPONENT STRESS TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) <b>Peak Voltage</b>	Q1 Rated 2SK2082 : 800 V / 9 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 410 V (2) 544 V (3) 708 V	P
2	Diode Peak <b>Voltage</b>	D60 Rated MBR3060PT :60 V/ 25 A  D55 Rated BYQ28X-200 : 200 V/ 10 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short  (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C	(1) 51.2 V (2) 48.6 V (3) 51.2 V  (1) 184 V (2) 174 V (3) 192 V	P
3	Clamp Diode Peak <b>Voltage</b>	D1 Rated HER208 : 1K V / 2 A	I/P:High-Line +3V =267 V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25°C	(1) 536 V (2) 562 V	P
4	<b>Input Capacitor Voltage</b>	C 5 Rated RUBYCON : 400 u /150 V	I/P:High-Line +3V =267 V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C	(1) 382 V (2) 372 V (3) 372 V	P
5	<b>Control IC Voltage Test</b>	U1 Rated 1203 : 16 V	I/P:High-Line +3V = V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C	(1) 12.9 V (2) 12.7 V (3) 12.7 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2003/12/30	RD SMAPLE	PASS	VINCENT TSENG	MAX LIN
2004/7/22	PRODUCT SMAPLE A404B36	PASS	VINCENT TSENG	MAX LIN
2005/11/15	PRODUCT SMAPLE W0510A20	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023